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UTILITY PATENT APPLICATION TRANSMITTAL <small>(Only for new nonprovisional applications under 37 C.F.R. § 1.53(b))</small>	Attorney Docket No.	4139P2201
	First Inventor or Application Identifier	CASSONE
	Title	METHOD FOR TREATING BODY TISSUE...
	Express Mail Label No.	

JC596 U.S. PTO
09/619357
07/19/00

APPLICATION ELEMENTS <small>See MPEP chapter 600 concerning utility patent application contents.</small>	ADDRESS TO: Assistant Commissioner for Patents Box Patent Application Washington, DC 20231
1. <input checked="" type="checkbox"/> * Fee Transmittal Form (e.g., PTO/SB/17) <small>(Submit an original and a duplicate for fee processing)</small> 2. <input checked="" type="checkbox"/> Specification {Total Pages 17 } <small>(preferred arrangement set forth below)</small> - Descriptive title of the invention - Cross References to Related Applications - Statement Regarding Fed sponsored R & D - Reference to Microfiche Appendix - Background of the invention - Brief Summary of the invention - Brief Description of the Drawings (if filed) - Detailed Description - Claim(s) - Abstract of the Disclosure 3. <input checked="" type="checkbox"/> Drawing(s) (35 U.S.C. 113) [Total Sheets 1] 4. Oath or Declaration [Total Pages 18] a. <input checked="" type="checkbox"/> Newly executed (original or copy) b. <input type="checkbox"/> Copy from a prior application (37 C.F.R. § 1.63(d)) <small>(for continuation/divisional with Box 16 completed)</small> i. <input type="checkbox"/> DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).	5. <input type="checkbox"/> Microfiche Computer Program (Appendix) 6. Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary) a. <input type="checkbox"/> Computer Readable Copy b. <input type="checkbox"/> Paper Copy (identical to computer copy) c. <input type="checkbox"/> Statement verifying identity of above copies ACCOMPANYING APPLICATION PARTS 7. <input type="checkbox"/> Assignment Papers (cover sheet & document(s)) 8. <input type="checkbox"/> 37 C.F.R. § 3.73(b) Statement of Power of Attorney (when there is an assignee) 9. <input type="checkbox"/> English Translation Document (if applicable) 10. <input type="checkbox"/> Information Disclosure Statement (IDS)/PTO-1449 [Copies of IDS Citations] 11. <input type="checkbox"/> Preliminary Amendment 12. <input checked="" type="checkbox"/> Return Receipt Postcard (MPEP 503) <small>(Should be specifically itemized)</small> 13. <input type="checkbox"/> * Small Entity Statement(s) filed in prior application, Status still proper and desired (PTO/SB/09-12) 14. <input type="checkbox"/> Certified Copy of Priority Document(s) (if foreign priority is claimed) 15. <input type="checkbox"/> Other: _____

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☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No. _____

Prior application information: Examiner _____ Group / Art Unit: _____

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 4b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

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Name	HARRY M. WEISS & ASSOCIATES, P.C.				
Address	4204 NORTH BROWN AVENUE				
City	SCOTTSDALE	State	AZ	Zip Code	85251
Country	U.S.A.	Telephone	480-994-8888	Fax	480-9472663

Name (Print/Type)	HARRY M. WEISS	Registration No. (Attorney/Agent)	19,497
Signature	<i>Harry M. Weiss</i>	Date	7/19/2000

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Harry M. Weiss

HARRY M. WEISS

Registration No. 19,497

APPLICANT: *Cassone*

APPLICATION TITLE: *Method For Treating Body Tissue...*

U.S. SERIAL NUMBER:

FILING DATE:

TYPE OF INFORMATION ENCLOSED

- ☒ CHECK NUMBER 1834 FOR \$ 345
- ☒ DRAWINGS (1 Sheet ☒ Enclosed)
- ☒ NEW PATENT APPLICATION
- ☐ PCT PATENT APPLICATION
- ☐ OTHER: _____

00619357-071900

**STATEMENT CLAIMING SMALL ENTITY STATUS
(37 CFR 1.9(f) & 1.27(b))—INDEPENDENT INVENTOR**

Docket Number (Optional)
4139P2201

Applicant, Patentee, or Identifier: ALPHONSE CASSONE

Application or Patent No.: _____

Filed or Issued: _____

Title: METHOD FOR TREATING BODY TISSUE DISEASE WITH
ACOUSTIC WAVES

As a below named inventor, I hereby state that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees to the Patent and Trademark Office described in:

- ☒ the specification filed herewith with title as listed above.
☐ the application identified above.
☐ the patent identified above.

I have not assigned, granted, conveyed, or licensed, and am under no obligation under contract or law to assign, grant, convey, or license, any rights in the invention to any person who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern, or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

- ☒ No such person, concern, or organization exists.
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Separate statements are required from each named person, concern, or organization having rights to the invention stating their status as small entities. (37 CFR 1.27)


I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

ALPHONSE CASSONE

NAME OF INVENTOR

NAME OF INVENTOR

NAME OF INVENTOR


Signature of inventor

Signature of inventor

Signature of inventor

7/19/2000
Date

Date

Date

METHOD FOR TREATING BODY TISSUE DISEASE
WITH ACOUSTIC WAVES

Field of the Invention

This invention relates generally to methods for treating disease and, more specifically, to a method for treating diseases affecting body tissue through the use of acoustic waves.

Background of the Invention

There are numerous disorders that effect the musculoskeletal connective tissue of human and animal bodies. These include the following: arthritis (including rheumatoid arthritis, osteoarthritis, joint pain, and psoriatic arthritis); menstruation related disorders (including cramping and endometrial pain); polymyositis; muscle disorders; and stress. These different disorders and diseases share in common the fact that they may cause inflammation of the musculoskeletal connective tissue, resulting in pain and discomfort. The effective treatment of these disorders, and the pain and discomfort they cause, is obviously a matter for concern.

Some background information regarding these disorders and diseases, their causes, their affects on the body, and their treatments, illustrate the foregoing:

Arthritis

The term "arthritis" means joint inflammation; i.e., swelling, redness, heat, and pain caused by tissue injury or disease in the joint. Types of arthritis include osteoarthritis, rheumatoid arthritis, and psoriatic arthritis.

Osteoarthritis, the most common form of arthritis, affects more than 20 million adults in the United States. It primarily affects cartilage, and occurs when cartilage begins to fray, wear and decay. In extreme cases, the cartilage may wear away entirely, leaving a bone-on-bone joint. Osteoarthritis can cause joint pain, reduced joint motion, loss of function, and disability. Disability results most often when the disease affects the spine and the weight-bearing joints.

Rheumatoid arthritis is an inflammatory disease of the synovium, or lining of the joint, that results in pain, stiffness, swelling, deformity, and loss of function in the joints. Inflammation most often affects joints of the hands and feet. More than two million people in the United States have rheumatoid arthritis.

Psoriatic arthritis occurs in some patients with psoriasis, a common scaling skin disorder. Psoriatic arthritis often affects the joints at the ends of the fingers and is accompanied by changes in the fingernails and toenails. Some people suffering from psoriatic arthritis also have spinal involvement.

Other than infectious arthritis, there is no known cure for arthritis. Current treatments only work to limit the symptoms of this disease. Treatments include rest and relaxation, exercise, hot and cold therapy, hydrotherapy, mobilization therapy, relaxation therapy, proper diet, instruction about the proper use of joints and ways to conserve energy, pain relief methods, assistive devices such as splints or braces, surgery, and

medication. The medications used include analgesics, nonsteroidal anti-inflammatory drugs, acetaminophen, and corticosteroids.

Bursitis

Bursitis is a condition involving inflammation of the bursae, small, fluid-filled sacs that help reduce friction between bones and other moving structures in the joints. The inflammation may result from arthritis in the joint or injury or infection of the bursae. Bursitis produces pain and tenderness and may limit the movement of nearby joints.

Menstrual Cramping and Endometrial Pain

Menstrual pain, dysmenorrhea, includes as one of its symptoms menstrual cramps. Dysmenorrhea is related to prostaglandin production. Current treatments include oral combined contraceptives, beta-blockers, nonsteroidal anti-inflammatory drugs, psychotherapeutic methods, and cervical dilatation.

Endometriosis is a common disease, affecting about 10 to 20 percent of American women of childbearing age. In endometriosis, tissue that looks and acts like endometrial tissue (the tissue that lines the inside of the uterus) is found outside the uterus, usually inside the abdominal cavity. At the end of every menstrual cycle, when hormones cause the uterus to shed its endometrial lining, endometrial tissue growing outside the uterus will break apart and bleed. However, unlike menstrual fluid from the uterus, which is discharged from the body during menstruation, blood from the misplaced tissue has no place to go. Tissues surrounding the area of endometriosis may become inflamed or swollen. The

inflammation may produce scar tissue around the area of endometriosis. These endometrial tissue sites may develop into what are called "lesions," "implants," "nodules," or "growths."

The most common symptom of endometriosis is pain, especially excessive menstrual cramps (dysmenorrhea) which may be felt in the abdomen or lower back or pain during or after sexual activity. Rarely, the irritation caused by endometrial implants may progress into infection or abscesses causing pain independent of the menstrual cycle. Endometrial patches may also be tender to touch or pressure, and intestinal pain may also result from endometrial patches on the walls of the colon or intestine.

Current treatment for endometriosis includes pain medication, hormone treatment, and hormone suppression treatment. Hormone suppression treatment shuts off ovulation, and thus is only available to those women who are not seeking to become pregnant.

Polymyositis

Polymyositis is an inflammatory muscle disease that causes varying degrees of decreased muscle power. The most common symptom is muscle weakness, usually affecting those muscles that are closest to the trunk of the body. Eventually, patients have difficulty rising from a sitting position, climbing stairs, lifting objects, or reaching overhead. In some cases, muscles not close to the trunk of the body may also be affected later in the course of the disease. Trouble with swallowing (dysphagia) may occur. Occasionally, the muscles ache and are tender to touch. Patients may also feel fatigue and discomfort and have weight loss or a low-

grade fever.

Treatment for polymyositis generally consists of a steroid drug called prednisone. For patients in whom prednisone is not effective, immunosuppressants such as azathioprine and methotrexate may be prescribed. Physical therapy is usually recommended to preserve muscle function and avoid muscle atrophy. Some cases of polymyositis respond to therapy, while the disease is usually more severe and resistant to therapy in patients with cardiac or pulmonary problems.

Muscle Disorders

The muscles of the body that can be voluntarily contracted are vulnerable to a variety of muscle disorders, including cramping, spasms, and tension. A muscle spasm occurs when a muscle contracts involuntarily. A sustained and forceful spasm is a muscle cramp. Muscle cramps generally last from a few seconds to fifteen minutes, and can affect a part of a muscle, a whole muscle, or a group of muscles. They are extremely common -- affecting almost every person at some time.

There are four major types of skeletal muscle cramps -- true cramps, tetany, contractures, and dystonic cramps. True cramps are the most common type of cramp. They are caused by the hyperexcitability of the nerves that stimulate the muscles. Tetany occurs when all of the body's nerve cells are activated, stimulating the muscles and causing spasms or cramps throughout the body. Dystonic cramps are where muscles that are not needed for the intended movement are stimulated to contract.

Cramps can be caused by a variety of factors, including as a protective mechanism following an injury, associated with the vigorous use of muscles and muscle fatigue, dehydration, body fluid shifts, low blood calcium, low blood magnesium, low potassium, medication, and vitamin deficiencies. Treatments include stretching of the cramped muscles, therapeutic doses of botulism toxin, and quinine. (Quinine, however, has been shown to cause birth defects and miscarriages.) Where cramps are associated with an underlying medical condition, treatment focuses on the underlying condition.

Stress

Stress is the reaction of animals to deleterious forces, such as abnormal states that tend to disturb their normal physiologic equilibrium. In response to stress, the pituitary gland and other systems within the body release hormones and trigger other responses to muster the body's defenses. Symptoms associated with stress include, among others, musculo-skeletal problems.

It should be clear then that each of these disorders and diseases presents a problem to those who are afflicted, and that safe and effective treatments are desirable. With respect to treatment methods, non-invasive, non-surgical techniques are generally preferred to surgery. Moreover, safe non-chemical treatments are generally preferred to the use of medications, which can have foreseen or unforeseen side-effects on the body. While the individual disorders listed here have different causes, the fact that they all can affect the musculoskeletal system raises the

possibility that a single treatment could potentially work for each of these disorders. The present invention is directed to a treatment for each of these disorders -- a treatment that is non-invasive, non-surgical, and non-chemical.

In United States Patent No. 5,132,942, issued to applicant herein, a low frequency electroacoustic transducer (the "Cassone Transducer") is disclosed. According to Patent No. 5,132,942, the Cassone Transducer could be used to efficiently disperse emulsions, chemical and other wastes, and the like for recycling and environmental enhancement. The Patent does not disclose the use of the Cassone Transducer for medical purposes. It is to that use that the current invention is directed.

Summary of the Invention

It is an object of this invention to provide a non-invasive method for treating diseases affecting body tissue.

It is a further object of this invention to provide a non-surgical method for treating diseases affecting body tissue.

It is a still further object of this invention to provide a non-chemical method for treating diseases affecting body tissue.

It is a still further object of this invention to provide a method for treating diseases affecting body tissue through the use of acoustic waves.

Brief Description Of The Preferred Embodiments

In accordance with one embodiment of the present invention, a

method for treating inflammatory musculoskeletal connective tissue disorders is disclosed. The method comprises the steps of: providing a low frequency sonic transducer; positioning a person having an inflammatory musculoskeletal connective tissue disorder a therapeutically beneficial distance from the low frequency sonic transducer; and exposing the person for a therapeutically beneficial period of time to acoustic waves from the low frequency sonic transducer at a therapeutically beneficial frequency.

In accordance with another embodiment of the present invention, a method for treating inflammatory musculoskeletal connective tissue disorders is disclosed. The method comprises the steps of: providing a low frequency sonic transducer; positioning a person having an inflammatory musculoskeletal connective tissue disorder between approximately one foot and approximately twenty feet from the low frequency sonic transducer from the low frequency sonic transducer; and exposing the person for between approximately fifteen minutes and forty-five minutes to acoustic waves from the low frequency sonic transducer at approximately six hundred Hertz.

In accordance with still another embodiment of the present invention, a method for treating inflammatory musculoskeletal connective tissue disorders is disclosed. The method comprises the steps of: providing a low frequency sonic transducer; immersing the low frequency sonic transducer in a liquid-containing container; positioning at least a portion of a body a person having an inflammatory musculoskeletal connective tissue disorder in the liquid-containing container; and exposing the person for between

approximately fifteen minutes and forty-five minutes to acoustic waves from the low frequency sonic transducer at approximately six hundred Hertz.

Brief Description Of The Drawings

Figure 1 is a perspective view of the practicing of the method of the present invention, with the positioning of a person at varying distances from an electroacoustic transducer.

Figure 2 is a side, cross-sectional view of an electroacoustic transducer of the type preferably used in the method of the present invention.

Detailed Description of the Preferred Embodiments

The present invention is concerned with an improved method for treating inflammatory musculoskeletal connective tissue disorders. Such disorders include but are not limited to: arthritis (including rheumatoid arthritis, osteoarthritis, joint pain, and psoriatic arthritis); bursitis; menstruation related disorders (including cramping and endometrial pain); polymyositis; muscle disorders; and stress.

The method begins with the placement of a transducer 10 like the Cassone Transducer in a container 12 containing water or another liquid. The container 12 preferably has a volume ranging from one to five hundred gallons, with a volume of between five and fifty five gallons regarded as particularly preferred and a volume of approximately fifty gallons regarded as optimal. Preferably,

the transducer 10 is modified slightly from the Cassone Transducer shown in Patent No. 5,132,942 by the addition of a water-tight electrical connector 14 to replace the coaxial supply line and terminal 10 shown in Figure 2 of Patent No. 5,132,942, and an eye-bolt 16 to replace the pair of lift members 12 shown in Figure 2 of Patent No. 5,132,942. These modifications are intended to facilitate the dedicated use of the transducer 10 in a liquid environment, with the water-tight electrical connector 14 providing increased safety and the eye-bolt 16 making more easy the removal of the transducer 10 from the container 12. (While a modified Cassone Transducer as described herein is preferred for the transducer 10, any transducer capable of operating in a liquid environment and of generating acoustic waves at frequencies within the ranges described below would suffice.)

Referring now to Figure 1, a person 18 suffering from a musculoskeletal connective tissue disorders is positioned near the container 12 with the transducer 10 therein. (While a person 18 is shown as a human, the term "person" as used herein is intended to include animals and humans alike.) The person 18 may be positioned at any distance relative to the transducer 10/container 12 that is determined to be therapeutically beneficial. Tests have indicated that benefit is provided within a range of from approximately one foot to approximately twenty feet -- though benefit may be provided outside of this range as well as at any point within this range. Distance A is intended to represent one foot of distance, distance B represents five feet of distance, distance C represents 10 feet

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of distance, and distance D represents 20 feet of distance.

While Figure 1 illustrates a person 18 positioned at different points to one side of the transducer 10, it should be noted that the transducer 10 is omni-directional, such that a person 18 could be positioned on any side of the transducer 10 -- or two or more persons 18 could be positioned on different sides of the transducer 10 simultaneously. Indeed, preferably, persons 18 are placed in chairs surrounding the transducer 10, and receive treatment in this relatively comfortable orientation.

The person 18 should be exposed to acoustic waves from the transducer 10 at any frequency that is determined to be therapeutically beneficial. Tests have indicated that benefit is provided within a range of from one to one thousand Hertz, with particularly good results obtained between four hundred and eight hundred Hertz and optimal results obtained at approximately six hundred Hertz.

The person 18 should be exposed to acoustic waves from the transducer 10 for a period of time that is determined to be therapeutically beneficial. Tests have indicated that benefit is provided by exposure for a period of time ranging from two seconds to one hour, with better results provided by exposure for a period of time ranging from fifteen minutes to forty-five minutes. A range of twenty minutes to thirty minutes is preferred, and an exposure lasting approximately twenty-five minutes appears to provide optimal results. It appears further that, for better results, the treatment should be repeated over time on a weekly or

perhaps monthly basis, until the symptoms disappear permanently.

The method of the present invention has been tested on more than fifteen people suffering from musculoskeletal connective tissue disorders. Most of those tested experienced a significant reduction in pain. Arthritis sufferers, for example, experienced decreased pain and increased mobility, including for example the ability to make a fist.

It should be noted further that good results have been achieved in certain instances by having a person 18 place the afflicted portion of his or her body in the liquid in the container 12. In one embodiment, the container 12 may be made in a jacuzzi or bath size (or may actually be a jacuzzi), with persons 18 sitting in the container 12 for treatment. It is believed that such a method would be particularly beneficial for burn victims and the like. When practicing such a method, it is possible for a person 18 to be positioned extremely close to the transducer 10, even less than a distance of one foot.

Although a particular embodiment of the invention has been described in detail for purposes of illustration, various modifications may be made without departing from the spirit and scope of the invention. Accordingly, the invention is not to be limited, except as by the appended claims.

I Claim:

1. A method for treating inflammatory musculoskeletal connective tissue disorders comprising the steps of:

providing a low frequency sonic transducer;

immersing said low frequency sonic transducer in a liquid-containing container;

positioning a person having an inflammatory musculoskeletal connective tissue disorder a therapeutically beneficial distance from said low frequency sonic transducer; and

exposing said person for a therapeutically beneficial period of time to acoustic waves from said low frequency sonic transducer at a therapeutically beneficial frequency.

2. The method of Claim 1 wherein said therapeutically beneficial distance is between approximately one foot and approximately twenty feet from said low frequency sonic transducer.

3. The method of Claim 2 wherein said therapeutically beneficial distance is approximately one foot from said low frequency sonic transducer.

4. The method of Claim 2 wherein said therapeutically beneficial distance is approximately five feet from said low frequency sonic transducer.

5. The method of Claim 2 wherein said therapeutically beneficial distance is approximately ten feet from said low frequency sonic transducer.

6. The method of Claim 2 wherein said therapeutically beneficial distance is approximately twenty feet from said low frequency sonic transducer.

7. The method of Claim 1 wherein said therapeutically beneficial period of time is between approximately two seconds and one hour.

8. The method of Claim 7 wherein said therapeutically beneficial period of time is between approximately fifteen minutes and forty-five minutes.

9. The method of Claim 8 wherein said therapeutically beneficial period of time is between approximately twenty minutes and thirty minutes.

10. The method of Claim 9 wherein said therapeutically beneficial period of time is approximately twenty-five minutes.

11. The method of Claim 1 wherein said therapeutically beneficial frequency is between approximately one and one thousand Hertz.

12. The method of Claim 11 wherein said therapeutically beneficial frequency is between approximately four hundred and eight hundred Hertz.

13. The method of Claim 12 wherein said therapeutically beneficial frequency is approximately 600 Hertz.

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14. A method for treating inflammatory musculoskeletal connective tissue disorders comprising the steps of:

providing a low frequency sonic transducer;

immersing said low frequency sonic transducer in a liquid-containing container;

positioning a person having an inflammatory musculoskeletal connective tissue disorder between approximately one foot and approximately twenty feet from said low frequency sonic transducer from said low frequency sonic transducer; and

exposing said person for between approximately fifteen minutes and forty-five minutes to acoustic waves from said low frequency sonic transducer at approximately six hundred Hertz.

15. The method of Claim 14 wherein said person has arthritis.

16. The method of Claim 14 wherein said person has polymyositis.

17. The method of Claim 14 wherein said person has one of muscle cramps, muscle spasms, and muscle tension.

18. The method of Claim 14 wherein said person has one of menstrual cramping and endometrial pain.

19. The method of Claim 14 wherein said person has bursitis.

20. The method of Claim 14 wherein said person has stress.

21. A method for treating inflammatory musculoskeletal connective tissue disorders comprising the steps of:

providing a low frequency sonic transducer;

immersing said low frequency sonic transducer in a liquid-containing container;

positioning at least a portion of a body a person having an inflammatory musculoskeletal connective tissue disorder in said liquid-containing container; and

exposing said person for between approximately fifteen minutes and forty-five minutes to acoustic waves from said low frequency sonic transducer at approximately six hundred Hertz.

Abstract of the Invention

A method for treating inflammatory musculoskeletal connective tissue disorders by exposing the sufferer to acoustic waves from a transducer immersed in liquid. The person is preferably placed between one and twenty feet from the wave source, and is preferably exposed to waves at a frequency of about 600 Hertz for approximately twenty five minutes.

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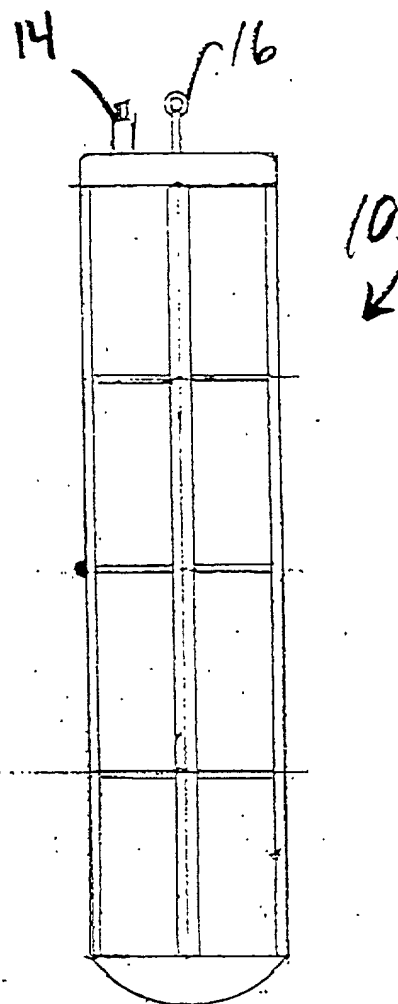
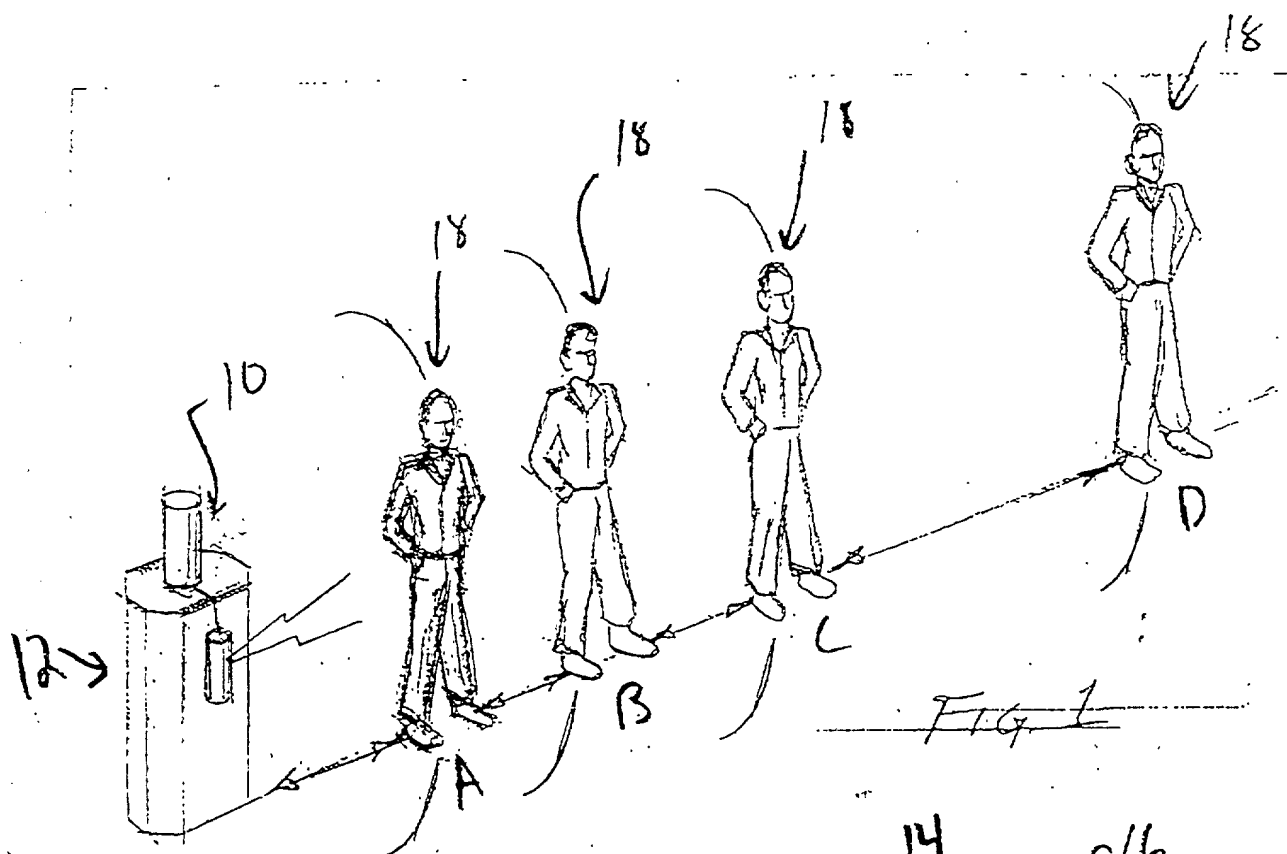


FIG. 2

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DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)	Attorney Docket Number	4139P2201
	First Named Inventor	CASSONE
	COMPLETE IF KNOWN	
	Application Number	/
	Filing Date	
	Group Art Unit	
<input checked="" type="checkbox"/> Declaration Submitted with Initial Filing	OR	<input type="checkbox"/> Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)
Examiner Name		

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

**METHOD FOR TREATING BODY TISSUE DISEASE
WITH ACOUSTIC WAVES**

the specification of which (Title of the Invention)

☒ is attached hereto

OR

☐ was filed on (MM/DD/YYYY) as United States Application Number or PCT International

Application Number and was amended on (MM/DD/YYYY) (if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
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			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below

Application Number(s)	Filing Date (MM/DD/YYYY)	<input type="checkbox"/> Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto

[Page 1 of 2]

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DECLARATION — Utility or Design Patent Application

I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application or PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (if applicable)

☐ Additional U.S. or PCT international application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto

As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: ☒ Customer Number **23504** OR ☐ Registered practitioner(s) name/registration number listed below

Name	Registration Number	Name	Registration Number
		23504	
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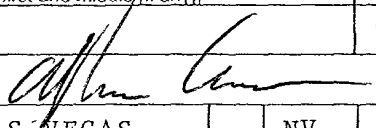
☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto

Direct all correspondence to: ☒ Customer Number **23504** OR ☐ Correspondence address below

Name					
Address					
Address					
City		State		ZIP	
Country		Telephone		Fax	

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor: ☐ A petition has been filed for this unsigned inventor

Given Name (first and middle, if any)		Family Name or Surname	
ALPHONSE		CASSONE	
Inventor's Signature			Date
Residence: City	LAS VEGAS	State	NV
		Country	USA
		Citizenship	US
Post Office Address	2626 South Rainbow Blvd., #109		
Post Office Address			
City	Las Vegas	State	NV
		ZIP	89146
		Country	

☐ Additional inventors are being named on the _____ supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto